



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/785,249	02/24/2004	Bart Van Den Bossche	920522-95589	8919
23644	7590	03/10/2006	EXAMINER	
BARNES & THORNBURG, LLP			SEVER, ANDREW T	
P.O. BOX 2786			ART UNIT	
CHICAGO, IL 60690-2786			PAPER NUMBER	
			2851	

DATE MAILED: 03/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/785,249	<b>Applicant(s)</b> BOSSCHE ET AL.	
	<b>Examiner</b> Andrew T. Sever	<b>Art Unit</b> 2851	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 19 December 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) 5-9 and 15 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3, 10-14, 16-18 and 21 is/are rejected.
- 7) ☒ Claim(s) 4, 19 and 20 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 February 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Election/Restrictions*

1. Applicant's election of species III (claims 1-4, 10-14, and 16-21) in the reply filed on 12/19/2005 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Applicant did not state whether the election was with traverse or not. Applicant stated that there were generic claims, however until generic claims are found to be allowable, claims 5-9 and 15 will remain withdrawn.

2. Claims 5-9 and 15 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 12/19/2005.

### *Information Disclosure Statement*

3. The listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609.04(a) states, "the list may not be

Art Unit: 2851

incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered.

### *Drawings*

4. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the color filters of claim 10 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Art Unit: 2851

Although they may be present in the drawings, it is not clear from applicant's specification what exactly qualifies as the color filters. For purposes of a prior art rejection it will be assumed that applicant is referring to the color filters of the light splitting means (it should be noted that dichroic mirrors are considered color filters by those of ordinary skill in the art at the time the invention was made.)

### *Specification*

5. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

6. The abstract of the disclosure is objected to because It is 2 paragraphs. Correction is required. See MPEP § 608.01(b).

The words: "+ Fig. 1" are included after the first paragraph.

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

9. Claims 1-3, 10-14, 16-18, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nishida (US 6,871,963.)

Nishida teaches in figure 4 a color projection system for projecting an image on a screen, comprising at least one light source (110) for emitting a white light beam, a light splitting means (202 and 204) for splitting said white light beam into color sub-beams each comprising light of a different wavelength or wavelength range, for each of said color sub-beams a light modulating means (400 B, G, and R), and a dichroic prism (500) for

recombining said color sub-beams, each of said modulating means positioned adjacent to a side of said dichroic prism,

Wherein said color projection system furthermore comprises further optical components (300, 700 and 250, which will be called relay lenses in the rest of this action) for imaging each of said color sub-beams onto the relevant light modulating means such that the images of each of said color sub-beams on the corresponding light modulating means, such that the images of each of said color sub beams on the screen have the same orientation (Nishida teaches that each path has an odd number of lenses after the paths are split, which as is well known in the art results in all of the sub beams having the same orientation.)

Nishida teaches in column 2 lines 18-32 that the relay lenses are adjusted to be in conformity across the three different color beams, however Nishida only teaches that this means that illuminating areas are set to increase the quality of the color image that is projected not specifically that this means that they are adjusted to have equal size.

Applicant acknowledges on page 3 lines 12-29 that it was well known in the prior art that it was desirous to make the path lengths equal, with the same magnification, and size (applicant cites several prior art references to that effect). Accordingly it would have been obvious to one of ordinary skill in the art at the time the invention was made to adjust the relay lenses of Nishida in order to achieve equal sized images of each of the color sub-beams as acknowledged by the applicant results in a better quality of the color image.

*With regards to applicant's claim 2:*

Since Nishida can adjust to any level of accuracy that is measurable, and since as taught above it is desirous for all the image sizes to be the same size, it would have been obvious to one of ordinary skill in the art to adjust them such that the difference in size is smaller than 5% or more preferably that there is no detectable difference in size.

*With regards to applicant's claim 3:*

The path for the green color light (G) is situated in one plane.

*With regards to applicant's claim 10:*

Part 200A comprises of color filters 202 and 204 put at right angles to each other.

*With regards to applicant's claim 11:*

Lenses 350, 310, 750, and 710 are additional lenses and as stated above there is an odd number of lenses in each path.

*With regards to applicant's claim 12:*

The number of mirrors is even (the mirrors are 320, 340, 720, and 740 and it should be noted that 0 is considered an even number for this purpose.)



*With regards to applicant's claim 13:*

Parts 400B, 400R, and 400G are transmissive light modulating means and no components are shown between them and the dichroic prism (500).

*With regards to applicant's claim 14:*

This is the obvious/inherent method of using the above described projection system to project a color image. See MPEP 2112.02.

*With regards to applicant's claims 16 and 21:*

Since the light path length is adjustable as stated above, and as stated above it is obvious to have 0% difference in the path size of the images which is achieved by having 0% difference in light path lengths, it would have been obvious to one of ordinary skill in the art at the time the invention was made to make the difference between path lengths is equal within 1%. It should be noted that path length in the optical arts is not synonymous with the actual distance between the dispositions of various components, but rather is a calculation based on among other things the index of refraction of the lenses, their shapes, their disposition and other components in the light path.

*With regards to applicant's claim 17:*

The first color splitting device is placed at the pupil of the first lens (250).

Art Unit: 2851

*With regards to applicant's claim 18:*

All the light splitting devices are dichroic mirrors.

***Allowable Subject Matter***

10. Claims 4, 19, and 20 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

11. The following is a statement of reasons for the indication of allowable subject matter: Claim 4 in combination with the subject matter of claim 1, claims a distance between the average color coordinates in a specific manner, this was not found in the prior art at least in as much as the prior art pertains to projection systems, and accordingly it would be allowable if re-written in independent form including all the limitations of claim 1. Claim 19 claims in combinations of the limitations of claims 1, 17, and 18 that the dichroic mirrors has/have a small incidence angle dependency; this was not found in the prior art coupled with all the limitations of claims 1, 17, and 18 and accordingly claim 19 would be allowable if re-written in independent form including all the limitations of claims 1, 17, and 18. Claim 20 is dependent on claim 19 and therefore is indicated allowable for the reason that claim 19 is indicated allowable and would be allowable if either claim 19 was written in independent form including all the limitations of claims 1, 17, and 18 or if claim 20 was re-written in independent form including all the limitations of claims 1, 17, 18 and 19.

***Conclusion***

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

US 6,807,020 to Wolfe teaches in column 10 lines 44-60 the desirability of good color shift as measured with the CIE standards, however Wolfe is applicable to projection screen not projection means.

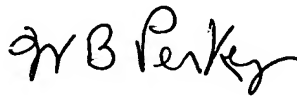
US 6,344,927 to Itoh et al. teaches a projection system in figure 2 that is similar in design to applicant's figure 4 and can be used in a final rejection if necessary.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew T. Sever whose telephone number is 571-272-2128. The examiner can normally be reached on 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Judy Nguyen can be reached on 571-272-2258. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2851

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read "W B Perkey".

AS

**William Perkey**  
**Primary Examiner**